10 CSR 10-3.160 Restrictions of Emission of Fluorides From Diammonium Phosphate Fertilizer Production

(1) Application.

(A) This regulation shall apply throughout the state of Missouri except in the City of St. Louis, and St. Charles, St. Louis, Jefferson, Franklin, Clay, Cass, Buchanan, Ray, Jackson, Platte and Greene Counties.

(2) Maximum Allowable Emission of Total Fluoride From the Production of Diammonium Phosphate Fertilizer.

(A) The maximum emission of total fluoride from the production of diammonium phosphate fertilizer shall not exceed 0.030 grams per kilogram of phosphorous pentoxide input to the process (0.06 lb/ton).

(3) Time Schedule for Compliance.

(A) All sources subject to subsection (2)(A) of this regulation shall be in compliance within eighteen (18) months of the effective date of this regulation.

(4) Monitoring of Operations

(A) Any facility subject to this regulation shall install, calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorous-bearing feed material to the diammonium phosphate process and a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. These devices shall have an accuracy of plus or minus five percent (5%) over their operating range.

(B) Any facility subject to this regulation shall maintain a daily record of equivalent phosphorous pentoxide feed to the diammonium phosphate process by determining the total mass rate in metric ton/hour of phosphorous-bearing feed using a monitoring device for measuring mass flow rate which meets the requirements of subsection (a) of this section and by following the procedure described in 10 CSR 10-3.160(5)(A).

(C) The air pollution control system for the affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined by applicable test methods and procedures.

(5) Determination of Equivalent Phosphorous Pentoxide Feed and Total Fluoride Emissions

(A) Equivalent phosphorous pentoxide feed at the affected facility shall be determined as follows:

1. Determine the total mass rate in metric ton/hour of phosphorous-bearing feed using a flow monitoring device meeting the requirements of 10 CSR 10-3.160(4)(A).

2. Calculate the equivalent phosphorous pentoxide feed by multiplying the percentage phosphorous pentoxide content, as measured by the spectrophotometric molybdovanadophosphate method (AOAC Method 9), times the total mass rate of phosphorous-bearing feed. AOAC Method 9 is published in the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970.pp. 11-12. Other methods may be approved by the director of the Department of Natural Resources.

(B) Determination of Total Fluoride Emissions. For each run, total fluoride emissions expressed as g/metric tons of equivalent phosphorous pentoxide feed shall be determined using the following equation:

$$E = \frac{(C_S Q_S)10^{-3}}{M_{P2O5}}$$

Where:

E = emissions of total fluoride in g/metric ton of equivalent phosphorous pentoxide feed.

C_S = concentration of total fluorides in mg/dscm as determined by 10 CSR 10-6.030(12).

Q_S = volumetric flow rate of the effluent gas stream in dscm/hour as determined by 10 CSR 10-6.030(2).

10^{-3} = Conversion factor for mg to g.

M_{P2O5} = Equivalent phosphorous pentoxide feed in metric ton/hour as determined by 10 CSR 10-3.160(5)(A).

(6) Performance Testing

(A) Any facility subject to this regulation shall have a performance test conducted on the diammonium phosphate process at the facility according to the procedure described in 10 CSR 10-6.030(13) within twenty-one (21) months after the effective date of this regulation.

10 CSR 10-3.160

EPA Rulemakings

CFR: 40 C.F.R. 52.1320(c)(79)(i)(B)

FRM: 59 FR 43480 (8/24/94), Correction Notice 60 FR 16806 (4/3/95)

PRM: 57 FR 32191 (7/21/92)

State Submission: 11/20/91

State Proposal: 16 MR 989 (7/1/91)

State Final: 10 C.S.R. 10-3 (11/29/91)

APDB File: MO-100

Description: This revision updates this rule to include the correct reference method specified in 10 C.S.R. 10-6.030.

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CFR: 40 C.F.R. 62.6350 and 62.6351

FRM: 51 FR 8827 (3/14/86)

PRM: 50 FR 30961 (7/31/85)

State Submission: 1/3/85

State Proposal: 3 MR 156 (4/3/78)

State Final: 3 MR 982 (12/1/78)

APDB File: MO-30

Description: The EPA approved a new regulation for the control fluoride emissions from existing phosphate fertilizer plans as part of the state's 111(d) plan.

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Difference Between the State and EPA-Approved Regulation

There are minor internal numbering differences but otherwise the regulations are the same.